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First-Year Mechatronic Experiences: Towards Predicting Student Motivation

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Abstract
Summary: This research examined the impacts that a half-semester mechatronics project in a first-year undergraduate course had on students' motivational orientation.

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Need: A data-driven answer to whether and to what degree a mechatronic experience impacts students' level of motivation will significantly contribute to the discussion of first-year undergraduate education.

Overview: Current literature has offered limited empirical evidence illustrating the impact that mechatronic experiences in first-year undergraduate courses have on student motivation and engagement. While there is much anecdotal evidence that these experiences are "exciting", "fun", or "interesting", an evidence-based foundation that clearly delineates the impact of how students are motivated to engage has eluded publication. Therefore, a data-driven answer to whether and to what degree a mechatronic experience impacts students' level of motivation will significantly contribute to the discussion of first-year undergraduate education.

Major Points:

- Mechatronic experiences impact the motivational orientation of students in first-year applied engineering courses
- Different student subpopulations were impacted differently by the mechatronic experience

Summary: This research examined the impacts that a half-semester mechatronics project in a first-year undergraduate course had on students' motivational orientation.